Routledge
Taylor & Francis Group

Journal of Research on Technology in Education

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/ujrt20

Building a high school violence prevention app to educate and protect students

Sharyn J. Potter, Elizabeth A. Moschella-Smith & Michelle Lynch

To cite this article: Sharyn J. Potter, Elizabeth A. Moschella-Smith & Michelle Lynch (2022): Building a high school violence prevention app to educate and protect students, Journal of Research on Technology in Education, DOI: 10.1080/15391523.2022.2110336

To link to this article: https://doi.org/10.1080/15391523.2022.2110336

JOURNAL OF RESEARCH ON TECHNOLOGY IN EDUCATION
https://doi.org/10.1080/15391523.2022.2110336

Building a high school violence prevention app to educate and protect students

Sharyn J. Potter, Elizabeth A. Moschella-Smith and Michelle Lynch

University of New Hampshire, Durham, NH

ABSTRACT

The hostile learning environment and academic disruptions that result from high school violence underscore the need for prevention education. Technology can facilitate the dissemination of educational content, prevention tools, and resources to students. We describe the three-phase iterative process that engaged high school students, administrators and staff, and parents to develop and refine the school safety mobile application (app), uSafeHS™. During the three-phase development process focus groups and surveys were administered with students, school administrators and staff, and guardians at 13 high schools. Pilot data was collected from seven New England public and private high schools. Optimizing mobile app technology is a promising method of reaching high school students and delivering student support resources that are customizable by each school and safety tools not currently available for this population.

ARTICLE HISTORY
Received 17 January 2022
Revised 19 July 2022
Accepted 2 August 2022

KEYWORDS
School violence; high school; prevention; mobile technology

School violence (SV), including bullying, hazing, harassment, dating violence, and assault (simple and sexual), is perpetrated at increasingly high rates among high school students nationwide, with over 4.3 million SV offenses each year (Flannery et al., 2016; Foshee et al., 2013; Hill & Kearl, 2011; Hoover & Pollard, 2000; Khadr et al., 2018; Nuwer, 2020; Planty et al., 2019; Smokowski et al., 2013). Annually, incidences of SV result in $400 million in direct costs and $94 million in health care costs from student injuries (Planty et al., 2019). When unaddressed, SV can result in hostile school environments that negatively impact students' health (e.g., psychological well-being) and their ability to learn (Flannery et al., 2016; Hertz et al., 2015; Hill & Kearl, 2011; Hoover & Pollard, 2000; Khadr et al., 2018; Nansel et al., 2001; Nuwer, 2020; Smokowski et al., 2013; Wilkins et al., 2014). Research illustrates that when students have the tools to identify the most prevalent types of SV behaviors, seek help, and safely intervene, the negative effects of SV can be reduced (Anderson & Whiston, 2005; Ting, 2009). Comprehensive prevention and response efforts that are interactive and easily accessible to high school students may promote student safety and lower rates of SV (Booth et al., 2011; Crawford & Burns, 2016; Kingston et al., 2018).

In the present paper, we describe the iterative development process of a student safety mobile application (app), uSafeHS™, and accompanying administrator dashboard for high school students. As part of a National Science Foundation I-Corps grant, the project team, comprised of researchers, practitioners, and app developers, identified that mobile technology would be a mechanism to support high school students. The uSafeHS app provides gamified social-emotional learning (SEL) content, a prevention tool to help students leave uncomfortable situations, online resources, and a confidential tip line. The paper proceeds in four sections. First, we discuss the consequences of the five most common types of SV. We then describe how educational content

CONTACT Sharyn J. Potter sharyn.potter@unh.edu Prevention Innovations Research Center, University of New Hampshire, Durham, NH 03824

and resources delivered via mobile technology can be used to educate and engage students in SV prevention and response efforts. Third, we describe the three-stage development process of uSafeHS. App development was informed by focus groups and surveys with high school students, administrators and staff, and parents. Finally, we present the lessons learned from the iterative development process and future directions for leveraging mobile technology to create safer school communities.

Literature review

Prevalence and impact of school violence

Research illustrates that bullying (in-person and cyber), hazing, harassment (sexual and identity), dating violence, and assault (simple and sexual) are the most prevalent forms of SV in the United States (Flannery et al., 2016; Foshee et al., 2013; Hill & Kearl, 2011; Hoover & Pollard, 2000; Khadr et al., 2018; Nuwer, 2020; Planty et al., 2019; Smokowski et al., 2013). In fact, 20% of students aged 12-18 report in-person bullying and 37% report cyberbullying victimization (Li, 2006; National Center for Education Statistics, 2019; Patchin, 2019). Further, almost half of high school students (48%) who are part of groups (e.g., athletic teams) report experiencing hazing (Hoover & Pollard, 2000). Research on harassment indicates that 48% of students in grades 7-12 report being sexually harassed (Anderson & Jiang, 2018; Fogarty, 2014), while another 35.2% report being harassed for their race and 15.5% for their sexual orientation (Bucchianeri et al., 2013; Espelage et al., 2012, 2015; Poteat & Espelage, 2007). Lastly, approximately 14% of female and 6% of male students report physical and/or sexual dating violence (Kann et al., 2018), while 27% of female and 5% of male students report sexual abuse or assault (Finkelhor et al., 2014; Foshee et al., 2013).

All types of SV contribute to hostile learning environments (e.g., ostracization, decreased feelings of safety) that result in disruptions in academic performance (e.g., reduced attendance and motivation, incomplete assignments) (Flannery et al., 2016; Hertz et al., 2015; Hill & Kearl, 2011; Hoover & Pollard, 2000; Khadr et al., 2018; Nansel et al., 2001; Nuwer, 2020; Smokowski et al., 2013). Adolescents who perpetrate SV tend to be repeat offenders and report perpetrating multiple forms of SV (e.g., dating violence and bullying behaviors), further contributing to unsafe learning environments (Foshee et al., 2016; Wilkins et al., 2014; Yahner et al., 2015). In addition, all types of SV are associated with short- and long-term mental health problems, including depression, substance abuse, posttraumatic stress symptoms, and suicidal ideation, and physical health conditions, including injuries, chronic pain, and reproductive issues (Chiodo et al., 2009; Flannery et al., 2016; Foshee et al., 2013; Hill & Kearl, 2011; Hoover & Pollard, 2000; Jones et al., 2018; Khadr et al., 2018; Nansel et al., 2001; Nuwer 2020; Poteat & Espelage, 2007; Smokowski et al., 2013). These health consequences exacerbate the negative impact on high school students' academic and future career endeavors. Victims of SV are also at an increased risk of victimization later (e.g., attending college, adulthood) than non-victims (Carey et al., 2015; Young & Furman, 2008).

Using technology for violence prevention and response efforts

The high prevalence of SV and subsequent health and academic consequences highlight the need for prevention and response efforts, particularly those that address multiple forms of SV (Irwin et al., 2021). Prevention education not only improves high school students' knowledge of and attitudes toward SV, willingness to help friends, and conflict resolution skills, but also has the potential to lower rates of SV (Anderson & Whiston, 2005; Ting, 2009). However, recent research suggests that traditional SV prevention programs may not be as effective for high school populations (Yeager et al., 2015). Developments in technology (e.g., mobile applications, websites) offer new avenues for school administrators to engage their students in prevention. Technology may be a particularly useful tool as 95% of high school students have access to a Smartphone

and use it for multiple aspects of their daily lives, including classroom assignments (59%) (Anderson & Jiang, 2018).

Recently SV prevention efforts have embraced social-emotional learning (SEL) education as part of their programming, with the goal of creating safer school communities. The core SEL competencies (e.g., awareness of self and other, responsible decision making) focus on building social-emotional skills that improve students' ability to cope with daily challenges and lead to better social and academic outcomes (Nickerson, 2018; Payton et al., 2000; Zins et al., 2007). When students learn to understand how others think and feel, take responsibility for and control their own behavior, and resolve conflicts, schools become more supportive places to learn (Nickerson, 2018; Zins et al., 2007). For instance, schools that implement SEL programming show improvements in academic outcomes (e.g., higher grades, standardized test scores, graduation rates) and reductions in victimization, including bullying, and conflict problems amongst students (Durlak et al., 2011; Nickerson et al., 2019; Zins et al., 2007). Although most SEL programs target elementary and middle school populations, these efforts are successful at all educational levels, including high school (Durlak et al., 2011). This further highlight the need to widely disseminate SEL education within SV prevention efforts to high school students.

In addition, the underreporting of SV to school administrators and other adults underscores the need to provide schools with tools to facilitate help-seeking among high school students (Allan & Madden, 2008; Hill & Kearl, 2011; Hoover & Pollard, 2000). To this end, U.S. House Bill 4909 emphasized the importance of developing anonymous reporting systems, including mobile phone applications (apps), hotlines, and websites, to address threats of SV. Reporting tools enable students, teachers, and community members to confidentially report SV incidents and provide school administrators timely access to student concerns, which can facilitate the school's response to SV (Payne & Elliot, 2011). Given that high school students fear being stigmatized or embarrassed when seeking help from adults and report turning to trusted friends instead (Aguirre Velasco et al., 2020; Bundock et al., 2020; Gulliver et al., 2010; Rickwood et al., 2007), it is critical to provide easily accessible and age-appropriate resources when facing difficult situations.

Yet engaging high school students in violence prevention and response efforts offer challenges for school administrators and staff. For instance, many SV prevention programs, including Safe Dates, Escalation and Behind the Post, Green Dot, and Bringing in the Bystander-High School Curriculum, require in-person student attendance and training for school personnel (Coker et al., 2019; Edwards et al., 2019; Foshee et al., 2005; Levesque et al., 2016; Niolin et al., 2016; Wolfe et al., 2009). The in-person nature of these programs also limits the scope of programming (e.g., focus on one type of school violence) and the availability of information and resources that students may need in difficult situations. Additionally, concerns about confidentiality present barriers for adolescents seeking help (Aguirre Velasco et al., 2020; Bundock et al., 2020; Gulliver et al., 2010; Rickwood et al., 2007). Thus, technology (e.g., websites, apps) is seen as a promising method to educate students and provides the anonymity that students desire. Technology can promote safe learning environments for students through education on difficult and common social issues (e.g., bullying, dating violence), while also providing students with immediate access to simplified reporting procedures and local and national resources (Lim et al., 2014).

Gaps in SV technology platforms

Despite the growth in the use of technology, current online and mobile safety platforms are limited in their scope and reach. As shown in Table 1, many of the available school safety platforms only offer one of the many needed school solutions (e.g., school resources, or reporting tools) (Anonymous Alerts, 2020; MySafeSchool, 2020; Payne & Elliot, 2011; S.A.F.E., 2020; Stop!t, 2020; Tips411, 2020). While most platforms offer anonymous reporting features (Wilkins et al., 2014), some provide education and reporting features on the app or an accompanying website but not both (i.e., Say Something and Safe2Tell have education information on the accompanying website). uSafeHS addresses the existing gaps in available online and mobile platforms and is the only tool to provide educational content and prevention tools on the app.

Table 1. Comparison of available online and mobile student safety platforms.

	Mobile and Online School Safety Platforms[a]								
Features	Reportit®	Say Something[b]	Safe2Tell[b]	Tips411	S.A.F.E.	My Safe School	Anonymous Alerts	Stop!t Solutions	uSafeHS
Education for multiple types of school violence		X	X						**X**
Tool to help students leave risky situations									**X**
Confidential real-time reporting tool	X	X	X		X	X	X	X	**X**
Provides easy access to school, community, and/or national resources			X						**X**
Feature that allows school leaders to connect with students			X	X					**X**
Available 24/7	X	X	X	X	X	X	X	X	**X**

[a]The platforms in this table are administered by schools and monitored by school leaders OR law enforcement agencies.
[b]This app only offers reporting capabilities; the other features are ONLY available on the website.

Theoretical framework for app development

The uSafeHS development process was informed by three theoretically based frameworks that highlight the importance of incorporating end-user (i.e., high school students) and stakeholder (e.g., school administrators, teachers) insights: (1) *social self-identification* (Potter, 2012; Potter et al., 2011, 2015), (2) the *social-ecological model* (Banyard et al., 2007; Berkowitz, 2010; Bronfenbrenner, 2009; Maton, 2000; Stokols, 1992, 1996), and (3) the *Consolidated Framework for Implementation Research* (CFIR; Kirk et al., 2016). End-users and stakeholders have seldom been involved in the development of violence prevention strategies despite the research showing that their insights are crucial for strategies to be effective (Potter, 2012; Potter et al., 2011). Guidance from these three frameworks allowed us to gauge the norms and contexts that users experience in ways that they may not have otherwise identified. We then translated this knowledge to develop content and functionality for the app that is effective in reducing SV among this population. Below we describe each theory and its application to the development of the uSafeHS app (see Table 2).

Social self-identification

The concept of *social self-identification* illustrates the significance of prevention strategies resonating with the end-user's everyday experiences. Research by Potter and colleagues (Potter, 2012; Potter & Stapleton, 2012; Potter et al., 2011) suggests that how participants perceive an intervention significantly affects its ability to resonate with them and create changes in their attitudes, knowledge, and behavior. Further, in both college and U.S. Military settings, participants were more likely to resonate and identify with an intervention when they saw people like themselves, their peers, and familiar contexts (Potter & Stapleton, 2012; Potter et al., 2011, 2015). In other words, to effectively engage end-users, prevention efforts must be relatable to them and their peers.

During all phases of app development, the research team drew on the concept of *social self-identification* by conducting focus groups and surveys with end-users and stakeholders. This information was used to understand the challenges that high school students face and develop app features that would be relevant and useful in their daily lives. Additionally, the research team worked with students to identify the language (e.g., expressions, terms) they use to discuss SV and other concerns with their peers so that the app resonates with them. The stories shared by students were also anonymized and incorporated into different components of app design and dissemination, including the SEL content and accompanying launch materials.

Social-ecological model

The *social-ecological model* emphasizes moving beyond the individual level to incorporate relationship, community, and societal factors in the development and implementation of prevention efforts (Dahlberg & Krug, 2002). To effectively prevent violence, it is crucial to engage multiple levels of the social ecology, as each level influences an individual's development (Bronfenbrenner, 2009; Stokols, 1992, 1996). For school-based prevention efforts, this may include engaging peer groups, families, school administrators, and the community where the school is located. Of note, this framework highlights the importance of engaging school administrators, as they can use their position to promote social norms that support healthy and safe school communities where students feel safe (Banyard et al., 2007, Berkowitz, 2010; Maton, 2000). The research team drew on the *social-ecological model* in the first and second phase of app development by obtaining feedback from end-users and other members of the school community (e.g., school administrators, teachers, parents) who are integral in the prevention of SV. This information was used to identify safety needs within the school community, including the lack of prevention education and accessible resources, and develop tools to address them.

Consolidated framework for implementation research

Lastly, the *CFIR* highlights the need to identify pertinent barriers and facilitators to end-user usage of prevention tools (Kirk et al., 2016). The *CFIR* also underscores the importance of

Table 2. Overview of the three-phase iterative process.

Phase	Data collection	Research participants	Guiding theoretical framework(s)	Outcomes assessed	Resulting product
1. Wireframe Development	Focus groups	1. Students 2. Faculty & staff 3. 3. Parents	1. Social Self-Identification 2. Social-Ecological Model	Identification of themes related to the context of SV in high schools	Wireframes of uSafeHS app (i.e., screen blueprint)
	Surveys	1. Students	1. Consolidated Framework for Implementation Research	Identification of themes related to phone app usage, communication, and help-seeking mechanisms	
2. Prototype Development	Focus groups	1. Student advisory board 2. Faculty & staff advisory board	1. Social Self-Identification 2. Social-Ecological Model	Identification of themes related to the structure and content of uSafeHS to meet the needs of the school community	App prototype & administrator dashboard
3. Pilot	Focus groups	1. Students	1. Social Self-Identification	Identification of themes to inform revisions to uSafeHS for dissemination	App & administrator dashboard ready for dissemination
	Survey & Dashboard Analytics	1. Students	1. Consolidated Framework for Implementation Research	Examination of uSafeHS usage (e.g., learning modules completed)	

understanding core social and contextual variables that should be reflected in the implementation and dissemination of prevention strategies (Kirk et al., 2016). To promote usage of the prevention tool, it is critical to engage with end-users and stakeholders to understand factors that encourage students to download and use mobile apps. During the first and third phase of app development, the research team facilitated focus groups with end-users to better understand app usage among high school students (e.g., reasons for downloading apps, frequency of usage). We also worked with stakeholders (e.g., school administrators, teachers) to identify how schools would incorporate app technology into their SV prevention efforts. Additionally, the *CFIR* guided the team's efforts during the pilot phase to examine how high school students used the app and how administrators launched the app in their schools and facilitated student usage. This allowed the research team to effectively engage target audience members in SV prevention.

Method

Three-phase development process

In the following section, we describe a three-phase approach to developing and refining the school safety app, uSafeHS (see Table 2). The iterative mobile app development process was guided by three theoretical violence prevention frameworks described above which note the importance of end-user feedback (Bronfenbrenner, 2009; Kirk et al., 2016; Potter, 2012; Potter & Stapleton, 2012; Potter et al., 2011; Stokols, 1992, 1996). App development was informed by focus groups and surveys with over 200 students, 70 school administrators and staff, and roughly 25 parents and guardians at 13 high schools and pilot data collected from seven public and private high schools in New England. All aspects of the research described were approved by the research team's Institutional Review Board (IRB).

Procedures

Participant recruitment

The project team worked with administrators at each school to recruit participants. During each phase, school administrators and teachers sent students details about the study via email and in-person. If students were interested in participating, and their parent or guardian gave them permission, they were invited to participate in focus groups and surveys. All students had the option to download the uSafeHS app regardless of research participation. In addition, school administrators sent details about the study to all parents and school personnel on their email distribution lists. Parents and school personnel were provided with a sign-up link to participate in virtual or in-person focus groups.

Focus groups

Focus groups were conducted during each phase of app development and were critical to the development process. Consent (for adults aged 18+) or assent (for minors aged 13-17) was obtained before beginning each focus group; parental consent was also obtained for minors. Focus groups lasted between 40-60 minutes each. Based on the phase of development (see Table 2), focus group questions varied and different samples of participants were recruited. At the end of each focus group, participants received a debriefing form that included local and national resources for participants who wanted additional information on any of the topics discussed during the focus group. Student participants were also provided with a gift card as compensation for their participation. Parents and school personnel were not compensated for their participation. Two members of the research team attended each focus group. One researcher facilitated the discussion, while the other recorded notes by hand. Handwritten notes were typed and reviewed by both researchers in attendance to ensure that the information accurately reflected the discussion.

During each phase of development, three team members analyzed the focus group data (Braun & Clark, 2006). First, to obtain the gestalt of the data, each researcher read all of the focus group notes. Next, the research team met to identify key patterns and themes for each sample of participants (e.g., students, parents). A coding scheme was then developed to facilitate data analysis and each team member systematically reviewed and coded the notes. The research team met regularly to refine the coding scheme to most accurately capture the data. Any coding discrepancies were discussed until a mutual agreement was reached. The findings were then presented to the app developers; the research team and app developers discussed the feasibility of participant suggestions and refinements to the app.

Surveys. Survey data was collected during wireframe development and the pilot. Consent (for adults aged 18+) or assent (for minors aged 13-17) was obtained prior to beginning the surveys; parental consent was also obtained for minors. Surveys lasted between 10-15 minutes each and were administered in person or via Qualtrics (i.e., a web-based survey system). Questions varied based on the phase of development. Descriptive statistics were used to examine survey responses and app usage.

Participants and measures

Wireframe development

From September 2019-April 2020, the research team conducted 10 focus groups (n = 199 participants) with high school students, 10 with high school administrators and staff ($n = 68$) and six with parents ($n = 26$) at eight of the partnering high schools. Focus group questions inquired about challenges faced by high school students, ideas for educational tools to address student concerns, and suggestions for resources to promote healthy relationships and student safety. In addition, high school students ($n = 199$) completed a brief survey prior to focus group participation. The questions focused on the type of phone students use (e.g., iPhone), phone usage (e.g., time spent), preferred methods of communication, and how students seek help in difficult situations. Students were also asked about their current smartphone usage and factors that influence them to download mobile apps.

Prototype development

During this phase of development, we assembled a Student Advisory Board (SAB) and a Faculty and Staff Advisory Board (FSAB) with members from five of the partnering high schools. From May-August 2020, focus groups were conducted with the SAB ($n = 20$ participants) and the FSAB ($n = 9$ participants) on a biweekly basis to inform the development of the uSafeHS prototype. All participants were shown the wireframes developed in the previous phase and asked for feedback on the various app features. SAB participants were further asked about navigation and layout changes (e.g., home screen), esthetic preferences (e.g., fonts, colors), and icons that represent each feature (e.g., home button). FSAB participants were asked specific questions related to the administrator dashboard and strategies to disseminate the app at their schools (e.g., classrooms, assembly setting).

Pilot

The uSafeHS app prototype was piloted at seven schools during an eight-week period between October and December 2020. The project team launched the app with small groups (e.g., homeroom, health classes, student group meetings) at each school. Given that the launch was separate from research activities, we were unable to collect information on the students who were offered the app. Aggregate data (e.g., app downloads, feature usage) were downloaded from the administrator dashboard for all partnering high schools. Due to the anonymous nature of the data, we were unable to collect individual information on feature usage (e.g., how many modules each

student completed). A subset of high school students were recruited to participate in a focus group ($n = 14$ participants) and an online survey ($n = 30$) at the end of the pilot period. Focus group questions focused on suggestions to improve existing features and strategies to promote user engagement with the app. The survey inquired about specific feature usage to better understand when and how students use the app. Although school personnel accessed the dashboard during the pilot phase, we did not collect data on their usage of the dashboard features (e.g., push notifications).

Results

Wireframe development

During the first phase of app development, the team facilitated in-person focus groups with high school students ($n = 199$ student participants) to understand student concerns and tools to support students via mobile technology. Student participants indicated that they wanted to learn about challenging topics, such as healthy relationships and how to help friends who are struggling, from reliable sources. While participants recognized that a wealth of information can be found on the Internet, they stated that it can be difficult to know which sources to trust. Participants also agreed that educational content needed to be short, informative, and easy to learn and read. In addition to content on different forms of SV, participants highlighted the need to include information on how to have a positive relationship with yourself (e.g., self-esteem, self-care), how to safely end relationships, and how to identify signs of both unhealthy (i.e., "red flags") and healthy relationships (i.e., "green flags"). Focus groups responses also reflected key SEL principles. For example, participants stated they wanted to learn how to better express and regulate emotions (e.g., how to "calm down", "check in" with myself), how to communicate (e.g., "better listening skills"), and how to set boundaries (e.g., how to "say no"). Suggestions for content development included using scenarios that help students connect the content with their real lives. Participants also stated that the educational content needed to be interactive or "gamified." The student participants agreed that there needed to be a "reward" for learning; if the content was just reading-based, students indicated that they would not use it. Some suggestions included answering questions about each topic or making an avatar of yourself that you need to "keep healthy."

In addition, participants believed the app needed practical features to get out of uncomfortable situations. One participant stated that "usually, I'd be texting my friend when a guy is being creepy" if they needed an excuse to leave a situation. Participants also indicated that this type of feature would need to be customizable, as a message from a parent would look different from one sent by a friend. Further, participants agreed that it was important to include online resources in the app. Participants stated that they wanted resources that they could text or chat with, as opposed to calling. Of note, participants highlighted resources around suicide and self-harm prevention, abuse, mental health, and substance use. They also indicated that a list of numbers for school resources, including counselors, teachers, and coaches, would be helpful. Lastly, participants stated that they would like the ability to report concerns to a school administrator, as some teachers do not take relationship concerns seriously. However, participants agreed that they need to "know it's safe" to report, indicating that reports must be kept confidential and that they would not get in trouble for making a report.

The survey administered to high school students ($n = 199$) focused on phone usage (e.g., time spent), communication, and accessing resources. The majority of participants used iPhones (86.4%) and reported spending approximately three hours on their smartphone each day (75.0%). Participants reported that they primarily learn about mobile apps through social media (e.g., Instagram, Snapchat) and friends. When asked what types of mobile apps they use, 97.0% of students said social media (e.g., Instagram, Snapchat), 96.0% said communication (e.g., instant messaging), 94.9% said music (e.g., Spotify), 90.4% said entertainment (e.g., YouTube), and 65.7% said games (e.g., Angry Birds). Participants' preferred method of communication was text (97.5%), followed by call (83.8%), online channels such as Facebook messenger (72.2%) and video chat

such as Facetime (72.2%). Lastly, when facing a problem, 86.9% of participants reported that they seek help from friends, 77.4% from a parent or other family (e.g., siblings), 27.1% from a professional, and 8.0% from national resources.

Focus groups with high school administrators and staff ($n = 68$ participants) and parents ($n = 26$ participants) aimed to gather information on prevention needs within the school community, including resources and tools to support students. Overall, school administrators and parents stated that there is a need for prevention education, resources, and safety tools in one place, that are easily accessible to both students and the school community. Adult participants stated that the app needed to cover "crucial conversations" with high school students and suggested drawing from SEL principles. These included: boundary-setting skills, communication skills, how to help friends (e.g., validation, intervention in difficult situations), and self-awareness and self-esteem (e.g., how to "ask for what you need"), in addition to topics related to SV (e.g., bullying, dating violence, assault). Participants also believed that students need information on healthy relationships, not only with dating partners, but with friends and oneself. Of note, administrators and staff believed this type of educational content would facilitate difficult conversations among students. Suggestions for content development included offering concrete, action-oriented steps (e.g., specific examples of things students can do or say) and using a "quick-tip," easy to read format (e.g., bullet points). Similar to students, administrators and parents also agreed the educational content needed to be interactive (e.g., quiz questions, reinforcement for learning).

Additionally, adult participants believed that a tool for students to leave uncomfortable situations, particularly those involving peer pressure, would be beneficial. Although parents and guardians hoped their child would text or call them directly if they needed help, they recognized that high schoolers often do not want to call their parents. Further, participants noted the importance of students knowing where to go for help within their school and the community (e.g., health centers, rape crisis centers). Adult participants also stated that resources around suicide, sexual health (e.g., pregnancy, sexually transmitted infections), and substance use were critical for students. School administrators and staff also highlighted the need to customize these resources for their school community. Lastly, administrators and staff indicated that a reporting feature could help streamline the management of SV incidents within the school. While some administrators reported that they would not want the reports to remain anonymous (e.g., difficulty in resolving reports without a known victim or perpetrator), others believed that students would be reluctant to use the feature if they knew they could be identified.

Upon completion of content analysis, key themes that emerged from the focus groups were entered and organized in a project spreadsheet. Over the course of six weeks, the project team (i.e., researchers, practitioners, and app developers) met regularly to discuss each theme and ideas for how to translate them into a mobile app. The project team drafted multiple versions of the wireframes and reviewed the feasibility of each proposed feature. The team then showed school partners the wireframes to ensure that they captured the focus group discussions. This phase resulted in the development of wireframes and four proposed features of the uSafeHS app (i.e., gamified educational content, a prevention tool, resources, and a reporting feature).

Prototype development

During the second phase, focus groups with Student Advisory Board (SAB) members ($n = 20$) were conducted to gather feedback on the app wireframes developed following Phase 1. The initial SAB meetings gathered feedback related to the proposed features and the navigation of the app. For instance, participants reported that they liked the ability to customize their avatar with the 400+ clothing items and accessories. Students also made suggestions for additional hairstyles, including rainbow hair and dreadlocks, to include in the app prototype. For the most part, participants stated that the navigation between the avatar Closet and Shop was "self-explanatory," and they liked having the option to "sell" items back to the Shop (e.g., shirts, sporting equipment) and purchase new ones. Participants also suggested adding an option that allows them to share their avatar with their friends or on social media platforms.

Substantial time was spent reviewing the *Learn and Earn* feature given the large amount of educational content presented in the app. Participants reported that the topics (e.g., dating violence, harassment) addressed problems that many high school students experience. In general, participants liked that the modules were short and easy to read (e.g., bullet point format, do's and don'ts). Feedback was provided for individual modules to promote the realism and relatability of the content. Participants also stated that the images used were "dated" and suggested including more current images. Further, participants provided positive feedback on the *Time to Leave* feature and stated that they would use both the text and call feature, individually and in tandem (i.e., text first and then call). Some noted that this feature is a good alternative to relying on friends to leave uncomfortable situations. Participants also reported that the navigation of this feature (e.g., selecting a contact, customizing the message/voice, setting a delay) was "easy to understand."

Participants reported that the school, community, and national resources provided in the *Find Resources* section would be of interest and useful to students. Some participants requested additional information on stress management and well-being, which resulted in an additional section with wellness resources. Lastly, participants stated that the *Report an Incident* questions were thorough but suggested clarifying that students should only enter their name into the report if they want school administrators to follow up with them. Participants also believed that the instructional message (e.g., schools' response to reports, mandatory reporting information) was too lengthy and suggested separating the information into multiple screens.

The later SAB meetings focused on the esthetic preferences for the app prototype, where participants were presented with various color palettes and icons. Participants were asked to identify the most intuitive icons for each feature to facilitate navigation of the app. After a brief discussion, participants were asked to vote on their icon preference. For example, participants reported that a magnifying glass would better represent the *Find Resources* feature than a question mark symbol. For the *Learn and Earn* feature icon, participants believed it was more important to "convey learning" than gamification (i.e., earning points for the avatar Shop).

Focus groups were also conducted with Faculty and Staff Advisory Board (FSAB) members ($n = 9$) to gather feedback on the wireframes. The early FSAB meetings solicited feedback on the proposed features and the administrator dashboard. Participants noted the importance of the breadth of content covered in the *Learn and Earn* feature and the learning checks after each learning module (i.e., question and response bubbles). Suggestions were made to include additional graphics to break up the text to make it more appealing to students. For the *Time to Leave* feature, participants liked that students are able to choose the contact who the fake call or text is sent from. This was particularly important for private schools, as they stated their students are more likely to receive calls from an advisor or dorm leader than a parent. Participants did not have any suggestions for adding or removing resources within the *Find Resources* section. The *Report an Incident* feature prompted discussions around mandatory reporting, liability, and privacy of students. As a result, the initial message was refined to encourage students to seek help in-person if they needed and use the reporting feature if they have concerns about another student as a bystander.

The administrator dashboard received positive feedback from FSAB members. Participants liked the ability to access anonymous data on app usage. The analytic data provides information on the number of downloads, types of features used (e.g., modules completed, resources accessed), and day and time of feature usage. They also appreciated the ability to customize their school and community resources and send push notifications to students through the dashboard. Participants suggested two types of dashboard access: one for editing (e.g., edit resources, respond to reports) and one for viewing (e.g., access analytics). In response to viewing and responding to reports submitted through the *Report an Incident* feature, suggestions were made for after-hours reporting. Staff participants' needs differed for public and private schools, with customized messages (e.g., only monitored during school hours) and additional contact information for after-hours emergencies for public schools.

The subsequent FSAB meetings focused on plans for launching the uSafeHS app, including school-wide assemblies and presentations in homeroom or advisory classes. Launch plan

discussions revolved around how to implement within the school community, particularly in a hybrid setting due to the COVID-19 pandemic. The FSAB agreed that individual launch plan meetings with school personnel and the research team were important to discuss relevant launch, reporting, and dashboard information. Participants also believed that lesson plans that accompany the *Learn and Earn* content would facilitate implementation of the app in classroom settings. As a result, a lesson planning guide was developed by practitioners who worked with the research team to facilitate discussions around the educational content. Lastly, a host of promotional materials (e.g., flyers, parent information sheets) were created and reviewed by the FSAB to facilitate launch efforts. Participants suggested using digital screens as an additional avenue to promote awareness of the app.

The project team followed the same process as the wireframe development phase to analyze and organize the focus group data. Over the course of eight weeks, the project team met regularly to discuss the key themes and ideas for prototype design. The project team reviewed screenshots of the prototype and used the Whiteboard feature in Zoom to annotate each app screen and icons. The team then met with school partners to customize launch materials with school logos and resources. This phase resulted in a prototype of the uSafeHS app and accompanying launch materials (e.g., flyers).

Pilot

During the eight-week pilot period, the uSafeHS app was launched in small groups (e.g., homeroom, health classes, student group meetings) at each of the seven schools. The dashboard analytics indicated that a total of 537 students downloaded and used the uSafeHS app prototype. A total of 1,762 education modules were completed and 51 resources were accessed. Additionally, eight incident reports were submitted and resolved. The focus group ($n = 14$) gathered feedback about improvements to the overall app, avatar, and prevention features. For example, participants suggested adding a tutorial for when users first open the app that shows how the different features operate. An additional suggestion included adding a "try it on" option to the avatar Closet so users can preview an item before purchasing the item. Participants also recommended adding an option to upload an audio recording to the *Time to Leave* feature that could play when receiving a fake call. In particular, several participants stated that their friends would recognize the voices of their parents and it would be obvious if the call did not come from them directly. To promote continuous engagement with the app, participants suggested updating the sharing capabilities (beyond the avatar) so that they can communicate with their friends (e.g., share the number of modules completed).

The online survey ($n = 30$) asked about the usage of and feedback on specific features. Of the participants who completed the learning modules ($n = 8$), 100% said the module improved their knowledge, that the scenarios presented were realistic, and that they have the tools to seek help after completing the module. Participants suggested incorporating information on how to support friends who are not ready to leave an unhealthy relationship. Of the students who used the *Time to Leave* feature ($n = 4$), 75% of students ($n = 3$) reported being likely to use the feature in an uncomfortable situation in the future. Two participants liked that this feature helps to keep them safe in "sketchy situations" which are "very common" for students. Lastly, of the students who accessed resources ($n = 5$), 100% used the app for school resources and 80% ($n = 4$) used online national resources. The national resources were considered the most helpful to students. Participants also suggested adding information on media literacy and cyber security (e.g., what is safe to share on social media) to the national resources.

Final product

The uSafeHS platform (NSF PFI-TT 1919063) consists of two components: a mobile app (see Figure 1) and accompanying school administrator dashboard (see Figure 2). The mobile app provides four key features (see Figure 3): (1) gamified SEL educational modules, (2) a prevention

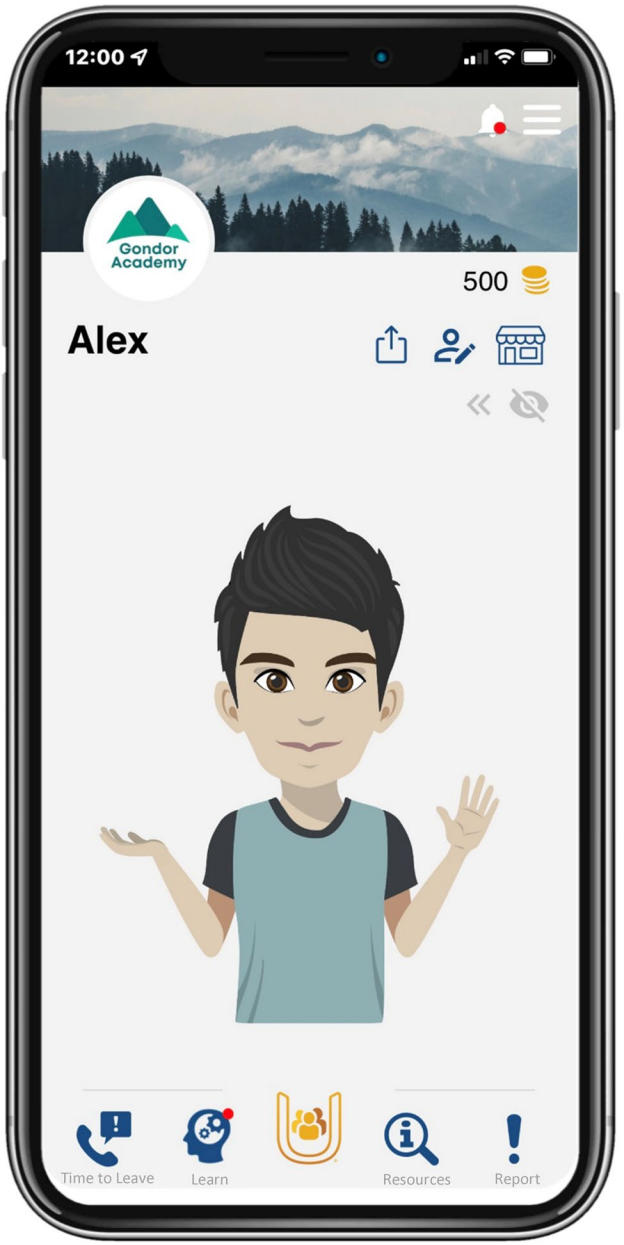

Figure 1. uSafeHS App Home Screen.

tool that helps students safely leave an uncomfortable situation, (3) school, community, and national resources, and (4) a confidential tip line to report an incident or concern to school administrators in real time. Unlike existing safety platforms, all four of the uSafeHS features are accessible 24/7 in one app on the user's phone.

The *Learn and Earn* feature provides gamified research-informed educational content for the most common forms of SV in an age-appropriate, conversational tone that aligns with the SEL core competencies (Nickerson, 2018; Payton et al., 2000). Presently, there are 31 micro-learning modules that can be completed in 3-5 minutes each and cover eight key topics, including the most common types of SV. Throughout the development process, educators reviewed the content for SEL standards, diversity and inclusion, and age appropriateness. The modules are written in a conversational tone and follow the same general format: concise definitions for each topic,

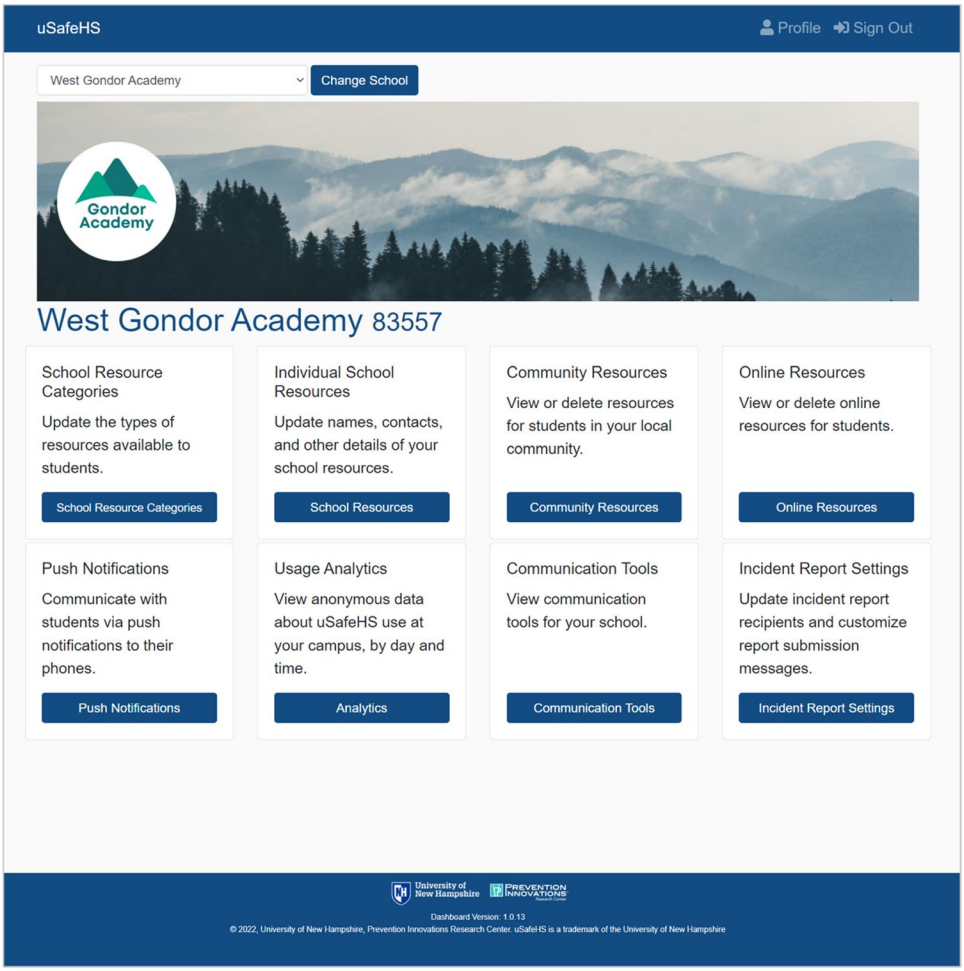

Figure 2. uSafeHS Administrator Dashboard.

debunking of common myths, and do's and don'ts for helping friends. The similar structure of the modules makes it easier for students to work through them. At the end of each micro-module, students are asked to answer one or two questions that serve as a learning check. Regardless of whether students answer the questions correctly, a response bubble appears that reiterates the takeaway messages. To encourage engagement with the app, students are awarded points for completing each micro-module and can redeem points for items to customize their avatar (e.g., hats, shirts, facemasks) in the uSafeHS Shop.

The *Time to Leave*™ feature allows students to discreetly leave uncomfortable or potentially dangerous situations by sending themselves a fake call or text message. Both the text message and caller voice (e.g., female, older) can be customized. The *Find Resources* feature provides easily accessible customizable school, community, and national resources. The national resources include resources for when students are experiencing harm (e.g., bullying, self-harm) and wellness resources that promote well-being and identity-building (e.g., self-care, coming out as lesbian or gay, multi-racial identity). The *Report an Incident* feature provides a place for students to confidentially submit an incident or concern to school administrators. The incident report is relayed in real time via text and/or email to a designated school administrator and through the uSafeHS administrator dashboard. To ensure confidentiality, administrators can only access dashboard information for their school. Since students are often reluctant to report concerns in-person (Aguirre Velasco et al., 2020; Bundock et al., 2020; Gulliver et al., 2010; Rickwood et al., 2007), the *Report an Incident* feature can overcome this hesitation and encourage reporting.

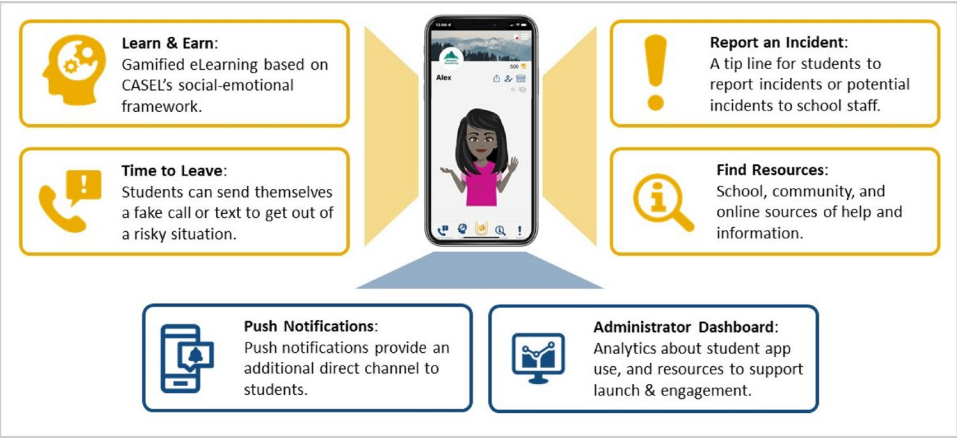

Figure 3. Overview of the uSafeHS Key Features.

Discussion

The uSafeHS app, and accompanying administrator dashboard, was developed through an iterative research process that engaged high school students, administrators and staff, and parents. uSafeHS addresses existing gaps in available student safety platforms to provide educational content, prevention and reporting tools, and resources in one place. To address the issue of SV and create safer learning environments, the research team incorporated SEL education into the development of the prevention tool (i.e., *Learn and Earn*). Discussions with high school students, administrators and staff, and parents also revealed the necessity of including this content in an interactive and engaging manner. Further, students highlighted the need to excuse themselves from an uncomfortable or potentially dangerous situation (i.e., *Time to Leave*). The uSafeHS app also offers confidential resources (i.e., *Find Help*) and confidential reporting options (i.e., *Report an Incident*) for students facing difficult situations. uSafeHS is one example of utilizing technology to disseminate prevention and response efforts to reduce SV and promote safer school communities (Lim et al., 2014).

Lessons learned and limitations. The pilot phase took place during the COVID-19 pandemic (Fall 2020, Spring 2021). Due to the uncertainty and overload placed on high school administrators and staff during the pandemic, several of the initial partnering schools were unable to continue their participation in the project. The research team worked diligently with school administrators to pivot launch plans from in-person to remote and hybrid settings. Finally, the authors of the current paper also led the development of the uSafeHS app which may pose limitations in interpreting the data that was collected during the development process.

Future directions

Since the pilot, the research team has continued to refine the app based on data collected during the pilot phase. For instance, a module that specifically focuses on cyberbullying was recently added to the *Learn and Earn* feature. Additionally, the research team has used some of the grant funding to pay school professionals to review the content. For example, members of the New Hampshire School Counselor Association and subject matter experts (i.e., adolescent relationships and hazing) reviewed the content the *Learn and Earn* modules and gave the research team examples of different scenarios and provided advice on how to make the scenarios more realistic. The research team will continue to seek out these collaborations. Finally, through conversations with partnering school staff, the research team has noted the concern that many educators and parents express related to the impact of the COVID-19 isolation on student social development and growth and note the need for greater SEL education. Therefore, the inclusion of SEL

education in uSafeHS is particularly important as school communities move forward from the COVID-19 pandemic impact (Cipriano et al., 2020). The project team will continue to work with partnering schools so the uSafeHS app can be a tool for teaching healthy behaviors, helping students safely respond to negative behaviors like bullying, and providing support.

Further, a host of mobile and online platforms have been developed to promote school safety; however, there is little research evaluating their effectiveness (Beaton, 2015; Payne & Elliot, 2011). The lack of data highlights the need for more comprehensive and rigorous evaluation studies to assess the efficacy of school safety apps in preventing and responding to SV (Beaton, 2015; Lim et al., 2014). Although the uSafeHS platform underwent an iterative development process and the pilot data suggest promise, there is a need to evaluate its efficacy. Continuation funding has been awarded from the National Science Foundation (NSF PFI-RP 2043388) to rigorously evaluate the uSafeHS app in over 30 high schools nationwide. Surveys and focus groups will continue to be conducted with students to further examine feature usage (e.g., frequency of use) and student outcomes (e.g., reductions in violence). We will also continue to obtain feedback from high school administrators and staff to understand the successes and challenges of app implementation and dashboard access (e.g., sending push notifications). Finally, during the focus groups, insights from high school administrators and staff steered the project team to develop accompanying materials (e.g., learning curriculum) for teachers to further support student engagement with the app. The team will work to evaluate the impact of these materials and other classroom activities on app usage and student outcomes.

Conclusion

As school communities work to promote student safety, mobile technology that provides educational content, prevention and reporting tools, and customizable resources can serve as a useful tool for high school students. Engaging end-users and stakeholders in the development of prevention strategies helps to ensure that these tools meet their needs, compared to strategies designed without target audience feedback (Bronfenbrenner, 2009; Kirk et al., 2016; Potter, 2012; Potter & Stapleton, 2012; Potter et al., 2011; Stokols, 1992, 1996). For instance, focus groups with students expanded the scope of the uSafeHS to provide education on multiple forms of SV, including hazing and assault. Student feedback also led to the "gamification" of learning content, emphasizing that rewards would incentivize them to use the app more frequently. The skills-based learning content allows students to "interact" with their phone while gaining knowledge to recognize and seek help when faced with potentially dangerous situations. Placing prevention tools on mobile phones provides high school students with easily accessible and readily available safety information, as most students own and regularly use a Smartphone, to help themselves or their peers (Anderson & Jiang, 2018).

Funding

This project was funded through a grant from the National Science Foundation (NSF PFI-TT 1919063).

Notes on contributors

Sharyn J. Potter, PhD, MPH, is a Professor in the Department of Women's and Gender Studies and the Co-founder and Executive Director of the University of New Hampshire Prevention Innovations Research Center. Dr. Potter's work focuses on engaging community members to reduce sexual and relationship violence, sexual harassment, and stalking in high schools, colleges, the United States Military, and other workplaces.

Elizabeth A. Moschella-Smith, PhD, MA, is a Research Scientist at the University of New Hampshire Prevention Innovations Research Center. Dr. Moschella-Smith's research focuses on outcomes of bystander intervention and factors that promote resiliency in the aftermath of trauma.

Michelle Lynch, BS, is the Director of Technology, Product Development, and Marketing at the University of New Hampshire Prevention Innovations Research Center. Ms. Lynch's work focuses

on the definition and development of the uSafeUS and uSafeHS safety apps, as well as client communications with colleges and high schools.

References

Anderson, M., & Jiang, J. (2018). Teens, social media & technology 2018. *Pew Research Center*, *31*(2018), 1673–1689. http://publicservicesalliance.org/wp-content/uploads/2018/06/Teens-Social-Media-Technology-2018-PEW.pdf

Allan, E. J., Madden, M. (2008). *Hazing in view: College students at risk*. https://www.stophazing.org/hazingview/

Anderson, L. A., & Whiston, S. C. (2005). Sexual assault education programs: A metanalytic examination of their effectiveness. *Psychology of Women Quarterly*, *29*(4), 374–388. https://doi.org/10.1111/j.1471-6402.2005.00237.x

Aguirre Velasco, A., Cruz, I. S. S., Billings, J., Jimenez, M., & Rowe, S. (2020). What are the barriers, facilitators and interventions targeting help-seeking behaviours for common mental health problems in adolescents? A systematic review. *BMC Psychiatry*, *20*(1), 1–22. https://doi.org/10.1186/s12888-020-02659-0

Anonymous Alerts. (2020). *Anonymous alerts*. https://www.anonymousalerts.com/

Banyard, V. L., Moynihan, M. M., & Plante, E. G. (2007). Sexual violence prevention through bystander education: An experimental evaluation. *Journal of Community Psychology*, *35*(4), 463–481. https://doi.org/10.1002/jcop.20159

Berkowitz, A. D. (2010). Fostering healthy norms to prevent violence and abuse: The social norms approach. In K. L. Kaufman (Ed.), *The prevention of sexual violence: A practitioner's sourcebook* (pp. 147–171). NEARI Press.

Beaton, B. (2015). Safety as net work: 'Apps Against Abuse' and the digital labour of sexual assault prevention. *Media Tropes*, *5*, 105–124. https://mediatropes.com/index.php/Mediatropes/article/view/22127

Booth, B., Van Hasselt, V. B., & Vecchi, G. M. (2011). Addressing school violence. *FBI Law Enforcement Bulletin*, *80*(5), 1–9. https://leb.fbi.gov/articles/featured-articles/addressing-school-violence

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Bronfenbrenner, U. (2009). *The ecology of human development*. Harvard University Press.

Bucchianeri, M. M., Eisenberg, M. E., & Neumark-Sztainer, D. (2013). Weightism, racism, classism, and sexism: Shared forms of harassment in adolescents. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *53*(1), 47–53. https://doi.org/10.1016/j.jadohealth.2013.01.006

Bundock, K., Chan, C., & Hewitt, O. (2020). Adolescents' help-seeking behavior and intentions following adolescent dating violence: A systematic review. *Trauma, Violence & Abuse*, *21*(2), 350–366. https://doi.org/10.1177/1524838018770412

Carey, K. B., Durney, S. E., Shepardson, R. L., & Carey, M. P. (2015). Incapacitated and forcible rape of college women: Prevalence across the first year. *Journal of Adolescent Health, 56*(6), 678–680. https://doi.org/10.1016/j.jadohealth.2015.02.018

Chiodo, D., Wolfe, D. A., Crooks, C., Hughes, R., & Jaffe, P. (2009). Impact of sexual harassment victimization by peers on subsequent adolescent victimization and adjustment: A longitudinal study. *Journal of Adolescent Health*, *45*(3), 246–252. https://doi.org/10.1016/j.jadohealth.2009.01.006

Cipriano, C., Rappolt-Schlichtmann, G., Brackett, M. A. (2020). Supporting school community wellness with Social and Emotional Learning (SEL) during and after a pandemic. *Edna Bennet Pierce Prevention Research Center, Pennsylvania State University.* https://www.conexionternura.com/media/documents/Supporting_School_Community_Wellness.pdf

Coker, A. L., Bush, H. M., Brancato, C. J., Clear, E. R., & Recktenwald, E. A. (2019). Bystander program effectiveness to reduce violence acceptance: RCT in high schools. *Journal of Family Violence, 34*, 153–164. https://doi.org/10.1007/s10896-018-9961-8

Crawford, C., & Burns, R. (2016). Reducing school violence: Considering school characteristics and the impacts of law enforcement, school security, and environmental factors. *Policing: An International Journal of Police Strategies & Management*, *39*(3), 455–477. https://doi.org/10.1108/PIJPSM-05-2016-0061

Dahlberg, L. L., & Krug, E. G. (2002). Violence: A global public health problem. In E. Krug, L. L. Dahlberg, J. A. Mercy, A. B. Zwi, & R. Lozano (Eds.), *World report on violence and health* (pp. 1–21). World Health Organization.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, *82*(1), 405–432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Edwards, K. M., Banyard, V. L., Sessarego, S. N., Waterman, E. A., Mitchell, K. J., & Chang, H. (2019). Evaluation of a bystander-focused interpersonal violence prevention program with high school students. *Prevention Science, 20*, 488–498. https://doi.org/10.1007/s11121-019-01000-w

Espelage, D. L., Basile, K. C., & Hamburger, M. E. (2012). Bullying perpetration and subsequent sexual violence perpetration among middle school students. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *50*(1), 60–65. https://doi.org/10.1016/j.jadohealth.2011.07.015

Finkelhor, D., Shattuck, A., Turner, H. A., & Hamby, S. L. (2014). The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. *Journal of Adolescent Health*, *55*(3), 329–333. https://doi.org/10.1016/j.jadohealth.2013.12.026

Flannery, D. J., Todres, J., Bradshaw, C. P., Amar, A. F., Graham, S., Hatzenbuehler, M., Masiello, M., Moreno, M., Sullivan, R., Vaillancourt, M., Le Menestrel, S. M., & Rivara, F. (2016). Bullying prevention: A summary of the report of the National Academies of Sciences, Engineering, and Medicine. *Prevention Science: The Official Journal of the Society for Prevention Research*, *17*(8), 1044–1053. https://doi.org/10.1007/s11121-016-0722-8

Fogarty, K. (2014). Teens and sexual harassment: Making a difference. *IFAS Extension, University of Florida*. https://ifas.ufl.edu/media/smartcouplesifasufledu/docs/pdfs/Teens-and-Sexual-Harassment--Making-a-Difference.pdf

Foshee, V. A., Bauman, K., Ennett, S. T., Suchindran, C., Benefield, T., & Linder, G. F. (2005). Assessing the effects of the dating violence prevention program safe dates using random coefficient regression modeling. *Prevention Science: The Official Journal of the Society for Prevention Research*, *6*(3), 245–258. https://doi.org/10.1007/s11121-005-0007-0

Foshee, V. A., Reyes, H. L. M., Gottfredson, N. C., Chang, L. Y., & Ennett, S. T. (2013). A longitudinal examination of psychological, behavioral, academic, and relationship consequences of dating abuse victimization among a primarily rural sample of adolescents. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *53*(6), 723–729. https://doi.org/10.1016/j.jadohealth.2013.06.016

Foshee, V. A., McNaughton Reyes, H. L., Chen, M. S., Ennett, S. T., Basile, K. C., DeGue, S., Vivolo-Kantor, A. M., Moracco, K. E., & Bowling, J. M. (2016). Shared risk factors for the perpetration of physical dating violence, bullying, and sexual harassment among adolescents exposed to domestic violence. *Journal of Youth and Adolescence*, *45*(4), 672–686. https://doi.org/10.1007/s10964-015-0404-z

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in adolescents: A systematic review. *BMC Psychiatry*, *10*(113), 113. https://doi.org/10.1186/1471-244X-10-113

Hertz, M. F., Everett Jones, S., Barrios, L., David-Ferdon, C., & Holt, M. (2015). Association between bullying victimization and health risk behaviors among high school students in the United States. *The Journal of School Health*, *85*(12), 833–842. https://doi.org/10.1111/josh.12339

Hill, C., Kearl, H. (2011). *Crossing the line: Sexual harassment at school*. AAUW. Washington DC. https://www.aauw.org/app/uploads/2020/03/Crossing-the-Line-Sexual-Harassment-at-School.pdf

Hoover, N. C., Pollard, N. J. (2000). *Initiation rites in American high schools: A national survey, final report*. http://www.alfred.edu/hs_hazing/docs/hazing__study.pdf

Irwin, V., Wang, K., Cui, J., Zhang, J., Thompson, A. (2021). Report on indicators of school crime and safety: 2020. *National Center for Education Statistics*. https://files.eric.ed.gov/fulltext/ED613654.pdf

Jones, L. M., Mitchell, K. J., Turner, H. A., & Ybarra, M. L. (2018). Characteristics of bias-based harassment incidents reported by a national sample of U.S. adolescents. *Journal of Adolescence*, *65*, 50–60. https://doi.org/10.1016/j.adolescence.2018.02.013

Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Queen, B., Lowry, R., Chyen, D., Whittle, L., Thornton, J., Lim, C., Bradford, D., Yamakawa, Y., Leon, M., Brener, N., & Ethier, K. A. (2018). Youth risk behavior surveillance. *Morbidity and Mortality Weekly Report. Surveillance Summaries (Washington, D.C.: 2002)*, *67*(8), 1–180. https://doi.org/10.15585/mmwr.ss6708a1

Khadr, S., Clarke, V., Wellings, K., Villalta, L., Goddard, A., Welch, J., Bewley, S., Kramer, T., & Viner, R. (2018). Mental and sexual health outcomes following sexual assault in adolescents: A prospective cohort study. *The Lancet. Child & Adolescent Health*, *2*(9), 654–665. https://doi.org/10.1016/S2352-4642(18)30202-5

Kingston, B., Mattson, S. A., Dymnicki, A., Spier, E., Fitzgerald, M., Shipman, K., Goodrum, S., Woodward, W., Witt, J., Hill, K. G., & Elliott, D. (2018). Building schools' readiness to implement a comprehensive approach to school safety. *Clinical Child and Family Psychology Review*, *21*(4), 433–449. https://doi.org/10.1007/s10567-018-0264-7

Kirk, M. A., Kelley, C., Yankey, N., Birken, S. A., Abadie, B., & Damschroder, L. l (2016). A systematic review of the use of the Consolidated Framework for Implementation Research. *Implementation Science: IS*, *11*, 72. https://doi.org/10.1186/s13012-016-0437-z

Levesque, D., Johnson, J. L., Welch, C. A., Prochaska, J. M., & Paiva, A. L. (2016). Teen dating violence prevention: Cluster-randomized trial of teen choices, an online, stage-based program for healthy, nonviolent relationships. *Psychology of Violence*, *6*(3), 421–432. https://doi.org/10.1037/vio0000049

Li, Q. (2006). Cyberbullying in schools: A research of gender differences. *School Psychology International*, *27*(2), 157–170. https://doi.org/10.1177/0143034306064547

Lim, N., Greathouse, S. M., Yeung, D. (2014). *The 2014 technology summit for victim service providers: Identifying challenges and possible solutions*. RAND Corporation. https://www.rand.org/pubs/conf_proceedings/CF326.html

Maton, K. I. (2000). Making a difference: The social ecology of social transformation. *American Journal of Community Psychology*, *28*(1), 25–57. https://doi.org/10.1023/A:1005190312887

MySafeSchool. (2020). *MySafeSchool*. https://www.mysafeschoolapp.com/

Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B., & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of American Medical Association*, *285*(16), 2094–2100. https://doi.org/10.1001/jama.285.16.2094

National Center for Education Statistics. (2019). *Indicator 10: Bullying at school and electronic bullying*. https://nces.ed.gov/programs/crimeindicators/ind_10.asp.

Nickerson, A. B. (2018). Can SEL reduce school violence? *Educational Leadership*, *76*(2), 46–50. https://www.ascd.org/el/articles/can-sel-reduce-school-violence

Nickerson, A. B., Fredrick, S. S., Allen, K. P., & Jenkins, L. N. (2019). Social-emotional learning (SEL) practices in schools: Effects on perceptions of bullying victimization. *Journal of School Psychology*, *73*, 74–88. https://doi.org/10.1016/j.jsp.2019.03.002

Niolon, P. H., Vivolo-Kantor, A. M., Tracy, A. J., Latzman, N. E., Little, T. D., DeGue, S., Lang, K. M., Estefan, L. F., Ghazarian, S. R., McIntosh, W. L. K., Taylor, B., Johnson, L. L., Kuoh, H., Burton, T., Fortson, B., Mumford, E. A., Nelson, S. C., Joseph, H., Valle, L. A., & Tharp, A. T. (2019). An RCT of dating matters: Effects on teen dating violence and relationship behaviors. *American Journal of Preventive Medicine, 57*(1), 13–23. https://doi.org/10.1016/j.amepre.2019.02.022

Nuwer, H. (2020). *Hazing deaths database: Unofficial hazing clearinghouse and watchdog site*. http://www.hanknuwer.com/hazing-deaths/

Patchin, J. W. (2019). 2019 Cyberbullying data. *Cyberbullying Research Center.* https://cyberbullying.org/2019-cyberbullying-data

Payton, J. W., Wardlaw, D. M., Graczyk, P. A., Bloodworth, M. R., Tompsett, C. J., & Weissberg, R. P. (2000). Social and emotional learning: A framework for promoting mental health and reducing risk behavior in children and youth. *The Journal of School Health*, *70*(5), 179–185. https://doi.org/10.1111/j.1746-1561.2000.tb06468.x

Planty, M., Langton, L., & Hendrix, J. (2019). *The cost of school crime*. RTI International. https://www.rti.org/publication/cost-school-crime

Payne, S. R., & Elliott, D. S. (2011). Safe2Tell®: An anonymous, 24/7 reporting system for preventing school violence. *New Directions in Youth Development, 2011*(129), 103–111.

Poteat, V. P., & Espelage, D. L. (2007). Predicting psychosocial consequences of homophobic victimization in middle school students. *The Journal of Early Adolescence*, *27*(2), 175–191. https://doi.org/10.1177/0272431606294839

Potter, S. J. (2012). Using a multi-media social marketing campaign to increase active bystanders on the college campus. *Journal of American College Health: J of ACH*, *60*(4), 282–295. https://doi.org/10.1080/07448481.2011.599350

Potter, S. J., Moynihan, M. M., & Stapleton, J. G. (2011). Using social self-identification in social marketing materials aimed at reducing violence against women on campus. *Journal of Interpersonal Violence*, *26*(5), 971–990. https://doi.org/10.1177/0886260510365870

Potter, S. J., & Stapleton, J. G. (2012). Translating sexual assault prevention from a college campus to a United States military installation: Piloting the Know-Your-Power bystander social marketing campaign. *Journal of Interpersonal Violence*, *27*(8), 1593–1621. https://doi.org/10.1177/0886260511425795

Potter, S. J., Stapleton, J. G., Mansager, K., & Nies, C. (2015). Adapting and piloting the Know Your Power® bystander social marketing campaign for a diverse campus population. *Cases in Public Health Communication and Marketing*, *8*, 71–93.

Rickwood, D. J., Deane, F. P., & Wilson, C. J. (2007). When and how do adolescents seek professional help for mental health problems? *The Medical Journal of Australia*, *187*(S7), S35–eS39. https://doi.org/10.5694/j.1326-5377.2007.tb01334.x

S.A.F.E. (2020). *S.A.F.E.* https://safeschoolapp.com/

Smokowski, P. R., Cotter, K. L., Robertson, C. I., & Guo, S. (2013). Anxiety and aggression in rural youth: Baseline results from the rural adaptation project. *Child Psychiatry and Human Development*, *44*(4), 479–492. https://doi.org/10.1007/s10578-012-0342-x

Stokols, D. (1992). Establishing and maintaining healthy environments: Toward a social ecology of health promotion. *American Psychologist*, *47*(1), 6–22. https://doi.org/10.1037/0003-066X.47.1.6

Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion: AJHP*, *10*(4), 282–298. https://doi.org/10.4278/0890-1171-10.4.282

Stop!t. (2020). *Stop!t*. https://stopitsolutions.com/stopit-anonymous-reporting-system/

Ting, S.-M. R. (2009). Meta-analysis on dating violence prevention among middle and high schools. *Journal of School Violence*, *8*(4), 328–337. https://doi.org/10.1080/15388220903130197

Tips411. (2020). *Tips411*. https://home.tip411.com/?gclid=EAIaIQobChMIhvGtqNie7gIV44NbCh2qEgXNEAAYASAAEgKm4PD_BwE

Wilkins, N., Tsao, B., Hertz, M., Klevens, J. (2014). *Connecting the dots: An overview of the links among multiple forms of violence*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention: Prevention Institute. https://www.cdc.gov/violenceprevention/pdf/connecting_the_dots-a.pdf

Wolfe, D. A., Crooks, C., Jaffe, P., Chiodo, D., Hughes, R., Ellis, W., Stitt, L., & Donner, A. (2009). A school-based program to prevent adolescent dating violence: A cluster randomized trial. *Archives of Pediatric Adolescent Medicine, 163*(8), 692–699. https://doi.org/10.1001/archpediatrics.2009.69

Yahner, J., Dank, M., Zweig, J. M., & Lachman, P. (2015). The co-occurrence of physical and cyber dating violence and bullying among teens. *Journal of Interpersonal Violence*, *30*(7), 1079–1089. https://doi.org/10.1177/0886260514540324

Yeager, D. S., Fong, C. J., Lee, H. Y., & Espelage, D. L. (2015). Declines in efficacy of anti-bullying programs among older adolescents: Theory and a three-level meta-analysis. *Journal of Applied Developmental Psychology*, *37*, 36–51. https://doi.org/10.1016/j.appdev.2014.11.005

Young, B. J., & Furman, W. (2008). Interpersonal factors in the risk for sexual victimization and its recurrence during adolescence. *Journal of Youth and Adolescence*, *37*(3), 297–309. https://doi.org/10.1007/s10964-007-9240-0

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2007). The scientific base linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation*, *17*(2–3), 191–210. https://doi.org/10.1080/10474410701413145